

REMARKS

Claims 28-34 have been examined and remain in the Application. Claims 28 and 31 are amended.

I. 35 U.S.C. § 103

In the Office Action of July 19, 2002, the Examiner rejects Claims 28-34 under 35 U.S.C. § 103(a) as unpatentable over Sakaguchi et al. (U.S. Patent No. 5,966,620) in view of Applicant's acknowledged prior art figure 2 (FIG. 2). In response, Applicant has amended independent Claims 28 and 31 as indicated above.

As to the amended Claims 28 and 31, Applicant respectfully submits that neither Sakaguchi nor FIG. 2 discloses metal lines, intercoupling active devices formed on a second single crystal substrate, which are unimpaired by heat during fabrication.

In accordance with one embodiment, the specification discloses a way to fabricate a second layer of active devices made of single silicon crystal without damaging metal lines coupled between the active devices by heat during the fabricating process. As noted in our previous response, the background section of the specification indicates that, prior to the disclosure and claimed subject matter, the second layer of active devices (transistors) was not made of a single-crystal silicon but was made of a polycrystalline silicon or amorphous silicon because fabrication of a second layer of active devices made of single silicon crystal requires processing steps that are performed well beyond the temperature that the interconnect system (e.g., metal lines interconnecting the transistors) can withstand. Accordingly, prior to the disclosure and claimed subject matter, an attempt may have been made to construct a second layer of active devices made of single silicon crystal; however, such structure could not be properly fabricated because the metal lines coupled between the active devices become damaged by heat during the fabrication process.

Applicant respectfully submits that Sakaguchi does not teach or suggest providing a second single crystal substrate portion having active devices formed thereon in which the active devices are intercoupled via metal lines, much less forming active devices on a second layer made of single silicon crystal without damaging metal lines coupled between the active devices.

Background section and FIG. 2 of Applicant's specification also does not disclose or suggest a second single crystal substrate portion having active devices formed thereon and intercoupled via metal lines, wherein the metal lines, intercoupling the active devices are unimpaired by heat during fabrication, as claimed in the amended Claims 28 and 31. Instead, the background second and FIG. 2 specifically note that a second single crystal substrate portion having active devices formed thereon and intercoupled via metal lines could not be fabricated because the metal lines coupled between the active devices will become damaged by heat during the fabrication process.

From the reasons and explanations provided above, it is clear that neither Sakaguchi nor FIG. 2 discloses or suggests providing a second single crystal substrate portion having active devices formed thereon in which the active devices are intercoupled via metal lines, wherein the metal lines, intercoupling the active devices are unimpaired by heat during fabrication, which is what is claimed in the amended Claims 28 and 31.

Since neither Sakaguchi nor FIG. 2 discloses or suggests the above-recited limitation, Applicant respectfully submits that, even if Sakaguchi and FIG. 2 could be combined, the combination would not render Claims 28 and 31 obvious. Applicant therefore respectfully requests that the rejection of these claims be withdrawn. Dependent Claims 29, 30 and 32-34 are submitted as not being obvious in view of the relied upon prior art at least for the reasons given in support of their base Claims 28 and 31.

CONCLUSION

In view of the foregoing, it is submitted that the claims are in condition for allowance. Reconsideration of the rejections and objections is requested. Allowance is earnestly solicited at the earliest possible date. If there are any fees due in connection with the filing of this response, please charge those fees to our Deposit Account No. 02-2666. If a telephone interview would expedite the prosecution of this Application, the Examiner is invited to contact the undersigned at (310) 207-3800.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN, LLP

Dated: October 11, 2002



Walter T. Kim,
Reg. No. 42,731

12400 Wilshire Boulevard
Seventh Floor
Los Angeles, California 90025
(310) 207-3800

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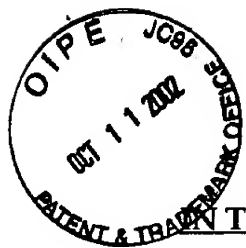
I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Box CPA, Commissioner for Patents, Washington, D.C. 20231 on October 11, 2002.



Linda Marie D'Elia

October 11, 2002

Attachment: Version With Markings To Show Changes Made



VERSION WITH MARKINGS TO SHOW CHANGES MADE

THE CLAIMS

The claims have been amended as follows:

28. (Amended Twice) An apparatus comprising:

a first substrate portion having a dielectric layer on a surface, the first substrate portion formed as a film of less than an entire portion of a starting material by demarcating a film thickness through an ion implantation into the starting material and separating the first substrate portion from the starting material; and

a second single crystal substrate portion having active devices formed thereon and defining a device surface wherein the dielectric layer of the first substrate portion is bonded to the device surface of the second substrate portion, wherein selected ones of said active devices of said second substrate portion are intercoupled via metal lines,

wherein said metal lines, intercoupling said active devices formed on said second single crystal substrate portion, are unimpaired by heat during fabrication.

31. (Amended Twice) An apparatus comprising:

a primary substrate having a first level of devices formed thereon and defining a device surface; and

at least one secondary single crystal substrate coupled to the device surface, the at least one secondary substrate having active devices formed thereon and selected ones of said active devices of said at least one secondary single crystal substrate are intercoupled via metal lines,

wherein said metal lines, intercoupling said active devices formed on said at least one secondary single crystal substrate, are unimpaired by heat during fabrication.